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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/622,741	07/21/2003	Young-Min Cheong	1293.1771	4721

49455 7590 07/14/2005

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WASHINGTON, DC 20005

EXAMINER
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CAO, ALLEN T

ART UNIT	PAPER NUMBER
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2652

DATE MAILED: 07/14/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/622,741

Applicant(s)

CHEONG ET AL.

Examiner

Allen T. Cao

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 26 April 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-9, 11, 13, 15 and 17-21 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1, 2, 5, 6, 9, 11, 13, 15 and 17 is/are rejected.
- 7) ☒ Claim(s) 3, 4, 7, 8 and 18-21 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

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1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-2, 5-6, 9, 11, 13, 15 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's admitted prior art (figures 1-2 and page 1 to page 4) in view of Yokota et al (US. 5,673,152).

Applicant's admitted prior art discloses an optical pickup device comprising a blade 12 in which an objective lens 11 is mounted; a plurality of wires 16 to elastically and movably support the blade 12 with respect to a holder 13 formed on a base 17; driving coils (14 and 15) installed in or on the blade and forming an electrical path to drive the objective lens along a focusing direction and a tracking direction; and a magnet 19 which is installed in the base and generates an electromagnetic force due to currents flowing through the driving coils to move the objective lens; wherein the blade includes a first blade portion (the inner portion which surrounded the lens 11) in which the objective lens is mounted, and a second blade portion (the outer portion which the coils 14 and 15 are mounted) in which the driving coils are mounted as set forth in claims 1, 5, 9 and 11.

Applicant's admitted prior art does not teach that the thermal conductivity coefficient of the first blade portion is lower than that of the second blade portion as set forth in claims 1, 5, 9 and 11.

Yokota et al, figure 12A, discloses an optical pickup device having a blade including a first blade portion 103 which the lens 1 is mounted and a second blade portion 2 which the coils 4 are mounted. Yokota et al also discloses that the thermal conductivity coefficient of the first blade portion 103 is lower than that of the second blade portion 2 (column 9, lines 57-64).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the optical pick up of Applicant's admitted prior art having first and second blade portions which the thermal conductivity coefficient of the first blade portion is lower than that of the second blade portion as taught by Yokota et al.

The rationale is as follows: One of ordinary skill in the art would have been motivated to modify the optical pick up of Applicant's admitted prior art having first and second blade portions which the thermal conductivity coefficient of the first blade portion is lower than that of the second blade portion as taught by Yokota et al to reduce heat/thermal of coils from the second blade portion (by insulation coating) to the lens, thus improve the read/write characteristics of the optical head.

Regarding claims 2, 6, 13 and 17, Yokota et al discloses that the first blade portion 103 is made of rubber, silica aerogel, silica gel grease, fiber, foam glass, or a viscous fluid and the second blade portion 2 is made of resin or a liquid crystal polymer. Applicant's admitted prior art as modified by Yokota et al do not disclose that the first blade portion is made of a reinforced plastics material (claims 2, 6 and 13) and the second blade portion is made of a magnesium alloy material (claims 2, 6 and 17).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to manufacture the first and second blade portions of the optical pickup of Applicant's admitted prior art as modified by Yokota et al with a reinforced plastics material (claims 2, 6 and 13) and the second blade portion is made of a magnesium alloy material (claims 2 and 6), respectively.

The rationale is as follows: One of ordinary skill in the art would have been motivated to make the first and second blade portions of the optical pickup of Applicant's admitted prior art as modified by Yokota et al with a reinforced plastics material (claims 2, 6 and 13) and the second blade portion is made of a magnesium alloy material (claims 2 and 6), respectively through lab routine experimentation and reasonable optimization to prevent the heat/thermal of coils from the second blade portion (by insulation coating) to the lens, thus improve the read/write characteristics of the optical head. Additionally, it has been held to be within the general skill of a worker in the art to select a known material having different chemical bonding structures on the basis of its suitability for the intended use as a matter of obvious design choice. In re Leshin, 125 USPQ 416 (CCPA 1960).

Regarding claim 15, Applicant's admitted prior art as modified by Yokota et al do not disclose that the reinforced plastics material is a vectra material in which a glass fiber of about 30% has been added.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to manufacture the reinforced plastics material is a vectra material in which a glass fiber of about 30% has been added.

The rationale is as follows: One of ordinary skill in the art would have been motivated to make the first and second blade portions of the optical pickup of Applicant's admitted prior art as modified by Yokota et al with the reinforced plastics material is a vectra material in which a glass fiber of about 30% has been added through lab routine experimentation and reasonable optimization to prevent the heat/thermal of coils from the second blade portion (by insulation coating) to the lens, thus improve the read/write characteristics of the optical head. Additionally, see In re Leshin, as set forth, supra.

3. Claims 3-4, 7-8 and 18-21 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

4. The following is a statement of reasons for the indication of allowable subject matter:

a) The prior art of record neither discloses nor the suggests the combination of all the limitations as set forth in claims 1-2 and "wherein the first blade portion is combined with a combining unit included in the second blade portion by mounting the second blade portion in a die, injecting the die with the reinforced plastics material, and injection molding the die as recited in claim 3.

b) The prior art of record neither discloses nor the suggests the combination of all the limitations as set forth in claims 5-6 and the limitations of that further comprises "a combining unit positioned at each of two ends of the second blade portion to integrally hold the first blade portion thereto" as recited in claim 7.

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c) The prior art of record neither discloses nor suggests the combination of all the limitations as set forth in claims 9-13 and further comprises "wherein the second blade portion comprises a stepped protrusion and the first blade portion is combined to the second blade portion by enclosing the stepped protrusion within the first blade portion" as recited in claim 18.

d) The prior art of record neither discloses nor suggests the combination of all the limitations as set forth in claims 9-13 and further comprises "wherein the second blade portion comprises a protrusion having a cross hole and the first blade portion is combined to the second blade portion by engaging the first blade portion in the cross hole" as recited in claim 20.

### ***Response to Arguments***

5. Applicant's arguments with respect to claims 1-9, 11, 13, 15 and 17-21 have been considered but are moot in view of the new ground(s) of rejection.

6. This is a NON-FINAL Office Action.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Allen T Cao whose telephone number is (703) 305-3796. The examiner can normally be reached on Mon - Thurs (7:30 - 6:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hoa T Nguyen can be reached on (703) 305-9687. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Allen Cao  
Primary Examiner

AC  
July 05, 2005